In the Claims

Please amend the claims as follows:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

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37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Cancelled)

42. (Currently Amended) A mid-infrared light source, comprising:

a wavelength shifter capable of shifting a shorter optical signal wavelength to a longer optical signal wavelength based at least in part on a Raman effect in a first waveguide, ~~wherein~~ the longer optical signal wavelength comprising ~~comprises~~ a mid-infrared wavelength, ~~and wherein~~ at least a portion of the wavelength shifter comprising ~~comprises~~ a ZBLAN waveguide, and wherein the wavelength shifter is pumped by an intermediate wavelength shifter comprising a second waveguide that is substantially different than the ZBLAN waveguide.

43. (Previously Presented) The mid-infrared light source of Claim 42, wherein the longer optical signal wavelength is approximately 1.7 microns or more.

44. (Previously Presented) The mid-infrared light source of Claim 42, wherein the longer optical signal wavelength is in the range of two (2) microns to ten (10) microns.

45. (Previously Presented) The mid-infrared light source of Claim 42, wherein the longer optical signal wavelength is in the range of five (5) microns to seven (7) microns.

46. (Original) The mid-infrared light source of Claim 42, wherein the ZBLAN waveguide comprises at least a portion of a gain region of the light source.

47. (Previously Presented) The mid-infrared light source of Claim 42, wherein the wavelength shifter further comprises:

a first reflector coupled to a first end of the ZBLAN waveguide; and

a second reflector coupled to a second end of the ZBLAN waveguide.

48. (Original) The mid-infrared light source of Claim 47, wherein coupling the first and second reflectors operates to form an optical cavity in the light source.

49. (Previously Presented) The mid-infrared light source of Claim 42, wherein the wavelength shifter further comprises:

a reflector coupled to a first end of the ZBLAN waveguide; and

one or more optical gratings coupled to a second end of the ZBLAN waveguide.

50. (Previously Presented) The mid-infrared light source of Claim 42, wherein the wavelength shifter further comprises:

one or more first optical gratings coupled to a first end of the ZBLAN waveguide; and

one or more second optical gratings coupled to a second end of the ZBLAN waveguide.

51. (Previously Presented) The mid-infrared light source of Claim 42, wherein the wavelength shifter further comprises:

one or more reflectors coupled to a first end of the ZBLAN waveguide; and

a pulse source coupled to a second end of the ZBLAN waveguide.

52. (Previously Presented) The mid-infrared light source of Claim 42, wherein the shorter optical signal wavelength comprises a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

53. (Previously Presented) The mid-infrared light source of Claim 42, wherein the shorter optical signal wavelength comprises a pulse repetition rate in the range of two (2) hertz to one hundred (100) megahertz.

54. (Previously Presented) The mid-infrared light source of Claim 42, further comprising a pump laser capable of generating the shorter optical signal wavelength.

55. (Original) The mid-infrared light source of Claim 54, wherein the pump laser is selected from the group consisting of a continuous wave laser and a pulsed laser.

56. (Previously Presented) The mid-infrared light source of Claims 54, wherein the pump laser is selected from the group consisting of a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pumped fiber.

57. (Cancelled)

58. (Currently Amended) The mid-infrared light source of Claim 42, ~~Claim 57,~~ wherein the intermediate wavelength shifter comprises at least in part a fused silica fiber and wherein an intermediate output wavelength of the intermediate wavelength shifter is less than 2.5 microns.

59. (Previously Presented) The mid-infrared light source of Claim 42, wherein the wavelength shifter is coupled to one or more external waveguides and wherein a coupling loss between the wavelength shifter and the one or more external waveguides comprises no more than five (5) decibels.

60. (Previously Presented) The mid-infrared light source of Claim 59, wherein the external waveguide comprises one or more optical fibers.

61. (Previously Presented) The mid-infrared light source of Claim 59, wherein the longer optical signal wavelength is communicated to a portion of a body associated with a patient by the one or more external waveguides coupled to the wavelength shifter.

62. (Original) The mid-infrared light source of Claim 42, wherein the ZBLAN waveguide is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

63. (Original) The mid-infrared light source of Claim 42, wherein the ZBLAN waveguide is a single mode optical fiber.

64. (Previously Presented) A long wavelength light source, comprising:

a wavelength shifter capable of shifting a shorter optical signal wavelength to a longer optical signal wavelength based at least in part on a Raman effect in a waveguide, wherein the wavelength shifter comprises:

a pump laser producing the shorter optical signal wavelength;

an intermediate stage coupled to the pump laser and producing an intermediate optical signal wavelength, wherein the intermediate optical signal wavelength is longer than the shorter optical signal wavelength; and

a final stage operable to generate the longer optical signal wavelength, wherein the final stage comprises at least in part a ZBLAN waveguide and wherein the longer optical signal wavelength is greater than 1.7 microns and is greater than the intermediate optical signal wavelength.

65. (Previously Presented) The long wavelength light source of Claim 64, wherein the pump laser is selected from the group consisting of a Nd:YAG laser, a Nd:YLF laser, laser diodes, a semiconductor laser, and a cladding pumped fiber.

66. (Previously Presented) The long wavelength light source of Claim 64, wherein the intermediate stage comprises at least in part fused silica fiber.

67. (Previously Presented) The long wavelength light source of Claim 64, wherein the ZBLAN waveguide is selected from the group consisting of an optical fiber, a hollow tube waveguide, an air core waveguide, and a planar waveguide.

68. (Previously Presented) The long wavelength light source of Claim 64, wherein the longer optical signal wavelength is greater than 2.8 microns.

69. (Previously Presented) The long wavelength light source of Claim 64, wherein the pump laser is a pulsed laser with a pulse width in the range of two (2) nanoseconds to one hundred (100) milliseconds.

70. (New) A mid-infrared light source, comprising:

a wavelength shifter capable of shifting a shorter optical signal wavelength to a longer optical signal wavelength based at least in part on a Raman effect in a waveguide, the longer optical signal wavelength comprising a mid-infrared wavelength, at least a portion of the wavelength shifter comprising a ZBLAN waveguide, wherein the wavelength shifter further comprises:

a first reflector coupled to a first end of the ZBLAN waveguide; and

a second reflector coupled to a second end of the ZBLAN waveguide.